

ALCOLIZER WALL MOUNT 4

USER MANUAL



Disclaimer – External Documents

The BAC reading obtained by correct use of this device is only considered accurate at the time of testing. Great care has been taken to ensure the accuracy of each reading.

Neither the manufacturer, the distributor, nor the owner accepts liability or responsibility due to any action or claim arising from the reading produced by this device, whether used correctly or incorrectly.

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CHANGE STATUS

Issue Number	Reason for Issue	Date	Authority
1.0	Initial Issue	1 Jun 2014	General Manager
1.1	New Template	20 Jan 2015	National Service Manager
2.0	New information added	01 Mar 2015	National Service Manager
2.1	Revised template	9 Mar 2015	General Manager
2.2	Released Version	12 Mar 2015	General Manager
3.0	Added Settings, Logs, Relays, Self-Check and Breath Test Authorisation information.	12 Jun 2015	Production Manager
3.1	Released Version	26 Jun 2015	General Manager

1. INTRODUCTION

This User Manual details the operation of the Alcolizer Technology Wall Mount 4 (WM4) alcohol breath testing instrument.

WM4s come in a variety of models with various configurations. Depending on the type of WM4 purchased, this manual may contain information that is not applicable to your model.

This manual is divided into various Sections and Sub-sections to enable the user to access the required information with ease. It includes Warnings, Cautions and Notes applicable to the WM4 machine and a Specifications table.

WARNING

If the supply cord is damaged, a risk of electrocution exists. It must be replaced by the manufacturer, an approved service agent or similarly qualified persons.

Should the instrument be damaged or require servicing, contact Alcolizer on 1300 789 908.

CAUTION

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

Ensure children do not play with the machine.

Do not disassemble. The machine contains no owner reusable parts.

2. DESCRIPTION OF WM4

2.1. Variants

The Wall Mount 4 is available in the following model types:

- Standard,
- Standard with coin operation,
- Standard with key pad and camera,
- Standard with key pad, camera and cellular (mobile connectivity and WiFi through a GSM module),
- All variants have internet connectivity through an Ethernet port or GSM module in the case of the cellular version.

Some variants include a mix of the types listed above. Depending on the specific user requirements, machines can include unique configurations. Should any concerns over the configuration be noted, contact your Alcolizer Technology representative for further advice.

2.2. Accessories

The Wall Mount 4 has available the accessories below but not limited to:

- Alert System (LED Strobe and Buzzer),
- Card Reader,
- iPad Connectivity,
- Printer,
- Wiegand.

Some accessories require specific installation and operating instructions. Please, contact your Alcolizer Technology representative for further advice.

2.3. Specifications

The basic specifications of the WM4 are detailed in Table 1.

Table 1 – Wall Mount 4 Specifications

Item	Specification
Dimensions	560mm (H) x 390mm (W) x 190mm (D)
Weight	18kg
Power	100-240V ~50/60Hz 75W
Housing	Steel construction
Sensor	Alcohol specific electrochemical fuel cell
Response Time	Within 3-5 seconds for a 0.100g/100ml BAC reading
Display - Type	25cm (10") colour graphics LCD
Operating Temp	0 to 50°C
Measurement Display	4 Digits (x.xxx g/100ml)
Detection Range	0.000 - 0.500 g/100ml
Accuracy	Absolute accuracy to better than +/- 0.005 g/100ml (BAC)
Sample volume	1.2 Litres
Calibration	Daily self-calibration for 12 months (internal certified gas)
Warranty	24 months
Certifications	AS3547 – 1997: Breath alcohol testing devices for personal use, AS/NZS 60335.1 – 2011: Household and similar electrical appliances - Safety - General requirements, EMC: Conducted & Radiated emissions

2.4. Equipment Overview

The WM4 is a wall mounted or free standing (on an approved stand) alcohol breath testing machine.

It is designed for high volume, fixed point commercial and industrial alcohol breath testing applications. The Alcolizer WM4 incorporates innovative and pioneering technology with features providing speed and efficiency for all testing requirements. It incorporates a self-recalibration feature providing accuracy and reliability from its own internal NATA Certified Gas Standard every 24 hours.

Figure 1 to Figure 4 describe the main parts the WM4.



Figure 1 – Front View (Typical)



Figure 2 – Left side and right side

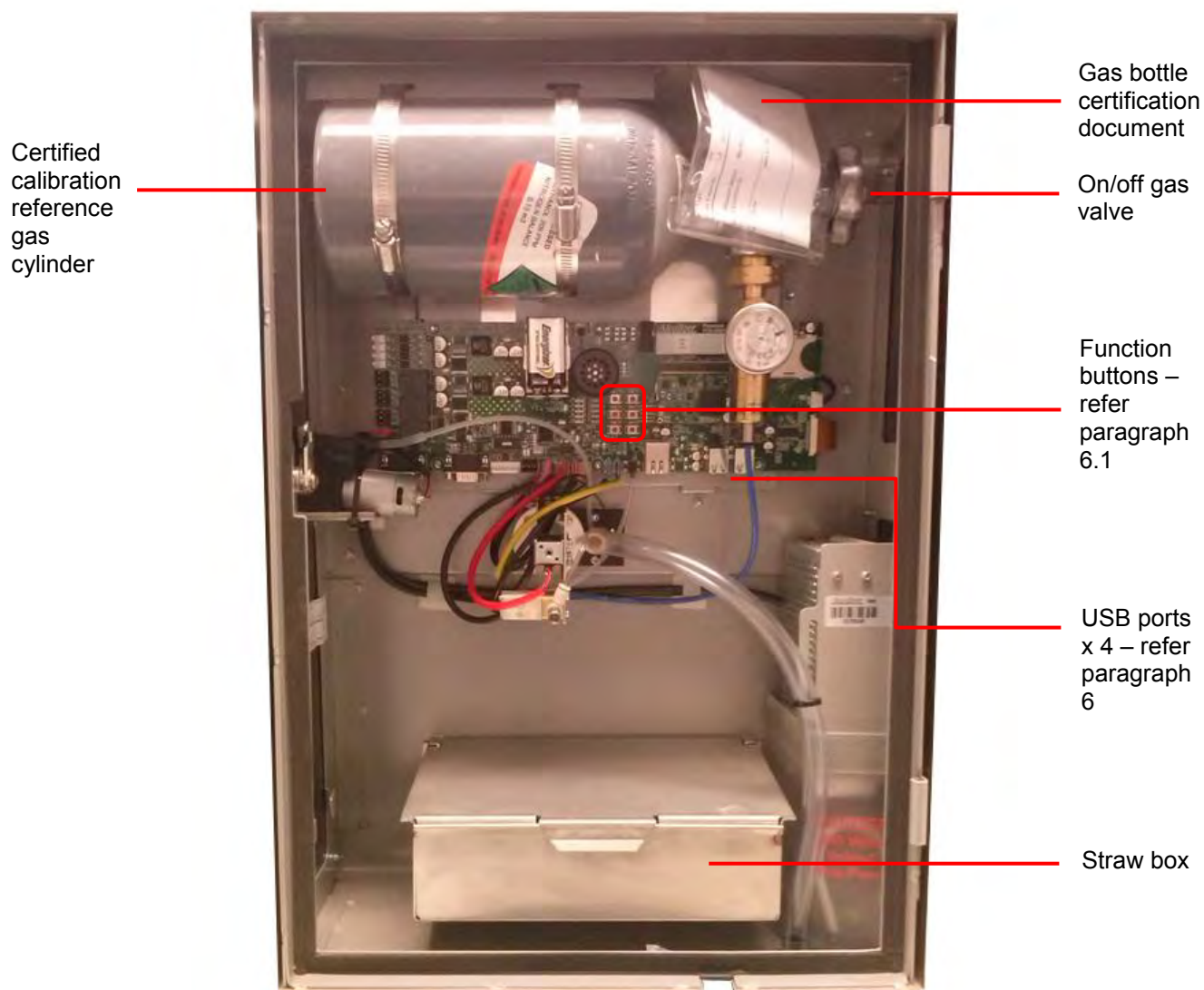


Figure 3 – Rear view – Internal

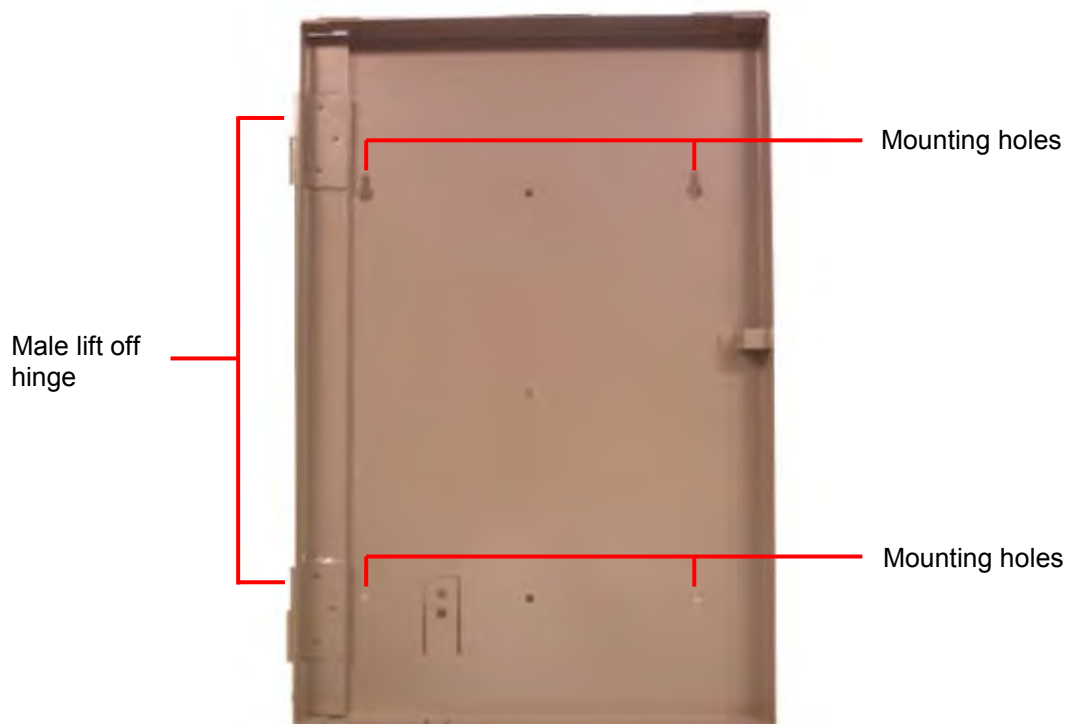


Figure 4 – Back Plate

3. INSTALLATION PROCEDURES

WARNING

The WM4 weighs 18kg. Use two man lift procedures when mounting and removing from back plate.

When the unit is open or not installed on the back plate, electrical components are exposed. Ensure electrical power is isolated at the supply power point whenever the unit is open unless specifically required for special troubleshooting requirements.

3.1. Installing the Back Plate

3.1.1. Mounting location

When choosing a suitable mounting location, the following factors should be considered:

- The instrument must be mounted on a wall or structure that can support the weight of the instrument.
- The instrument must not be exposed to rain or water.
- The instrument should be mounted near to a mains power socket to allow for easy connection.
- Under extremely heavy use, the instrument could discharge excess saliva from a vent on the bottom of the main unit. Avoid mounting the instrument above anything that could be affected by moisture (e.g. power points).
- The instrument must not be exposed to extreme temperatures outside of the defined operating range.

3.1.2. Mounting height and position

The instrument must be mounted and positioned at a height to accommodate the majority of users and in such a way to allow access to the key lock and to allow the machine to swing open. Refer to Figure 5 for the appropriate mounting dimensions of the back-plate.

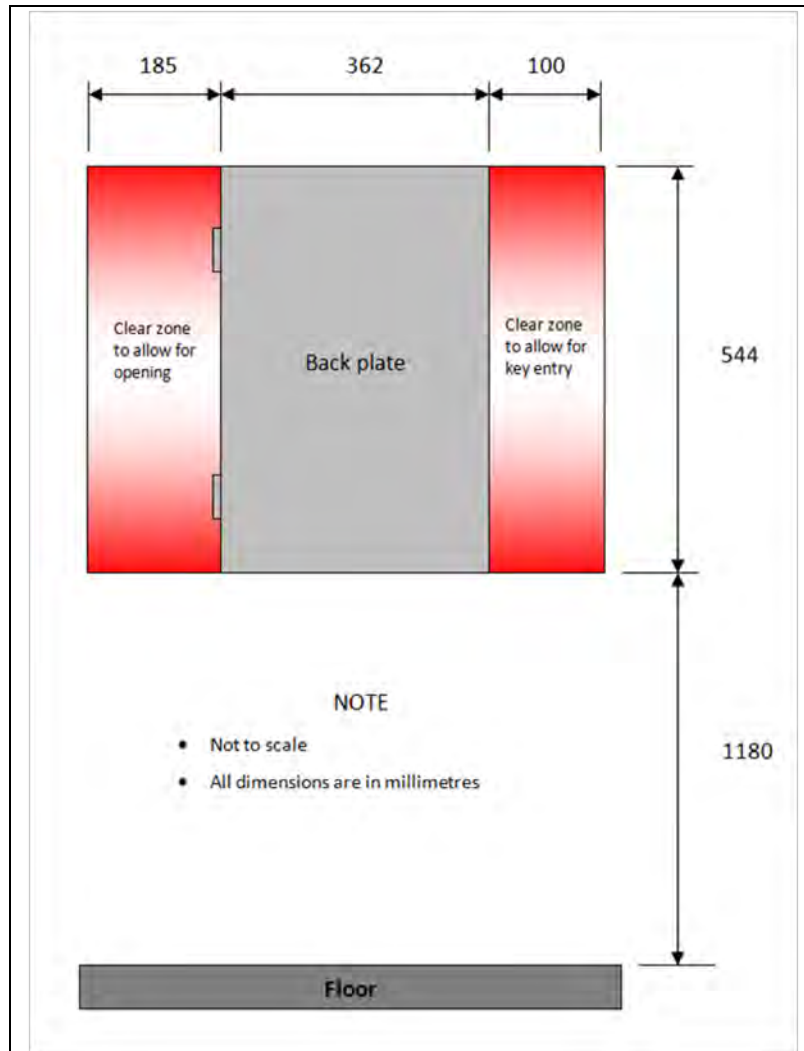


Figure 5 – Back Plate mount location

3.1.3. Mounting instructions

Mount the back plate in accordance with the following procedures:

- Unpack and remove the instrument from the packaging. Unlock the instrument and remove the back plate from the unit.
- Choose a suitable mounting site as described previously.
- Bend or remove any cutaway portions on the back plate to permit cable access if necessary (refer Figure 6).



Figure 6 – Cut-out portion on back plate

- d. Fix the back plate to the wall using masonry fixing hardware (e.g. medium duty anchors). The fixings should be strong enough to support the instrument (at least 20kg) and any incidental loading such as a person leaning or pulling on the instrument.

WARNING

Do not use adhesives (Liquid Nails) as the method of fixing as these are not considered to be a reliable or safe fixing means for the WM4.

3.2. Mounting and Starting the instrument

3.2.1. Mounting

Mount the instrument in accordance with the following procedures:

- a. Using an assistant, hang the instrument onto the back plate by aligning the male lift off hinge pins on the back plate with the main instrument lift of female hinge tubes.
- b. Confirm the instrument swings effectively and does not impact any other fixtures.
- c. Route any cables to avoid damage and trip hazards.
- d. Visually check that there are no loose components from transportation.
- e. Remove any packing materials.
- f. Remove the screen protector film from the front of the display screen.
- g. Load straws into the straw box, ensuring that the straws are lying freely within the box.

3.2.2. Initial starting

Perform the following steps for the initial start-up:

- a. Turn the reference gas on by rotating the on/off valve one full turn anti-clockwise (refer Figure 7).

NOTE

The gas bottle certification documents (attached to the gas bottle neck) must remain with the bottle (refer Figure 3).



Gas on/off
valve

Figure 7 – Turning the reference gas on

- b. Close and lock the instrument.
- c. Plug the power cord into a power outlet and turn the power on.
- d. Plug any other cords into their devices.

The instrument will take several minutes to start up and will take a further 10 minutes to perform its first self-calibration. After this, the instrument will be calibrated and ready for use.

4. OPERATING INSTRUCTIONS

4.1. Providing a breath sample

NOTE

For accurate results, food or drink must not be consumed for the 15 minutes prior to testing.

The BAC can continue to rise for up to two hours after the cessation of drinking, care should be taken if a result close to the designated BAC limit is indicated.

It can take 10 hours or more for the BAC level to return to zero after a high BAC level has been reached, in such cases further tests should be carried out later in the day or the following morning.

Perform a breath test in accordance with the following procedures:

- a. Ensure the instrument is ready to take a sample. This is indicated with a welcome screen and instructions on how to provide a breath sample (refer Figure 8). There may be a specific customer welcome screen.
- b. Take a straw from the straw holder.
- c. Place straw in the sample port (refer Figure 8).

CAUTION

Never inject fluids into the sample port. This could render the instrument inaccurate for subsequent tests or temporarily disable it.

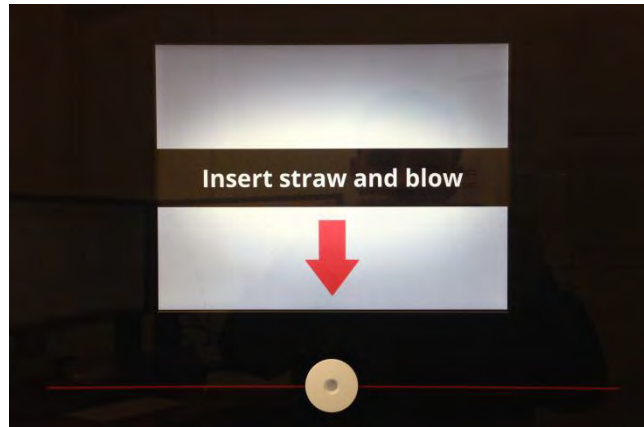


Figure 8 – Insert straw and blow

- d. Start blowing and continue blowing until the progress bar reaches 100% (refer Figure 9). During the blow sequence, a beeping sound will be heard.



Figure 9 – Keep blowing

- e. Stop blowing when the display shows Stop Blowing. This will also be indicated by a long beep (refer Figure 10).

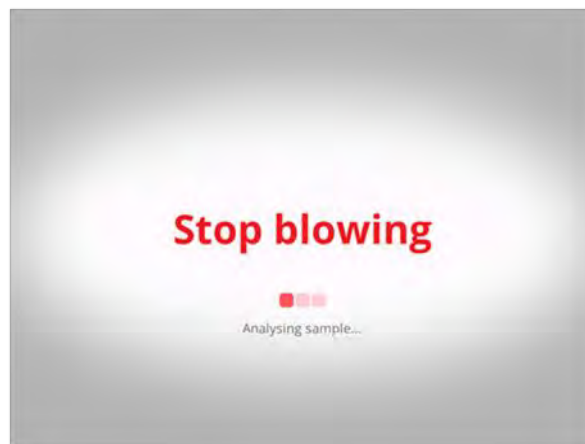


Figure 10 – Stop Blowing

4.2. Analysing the breath sample

The instrument will perform an analysis and then display the result (refer Figure 11).

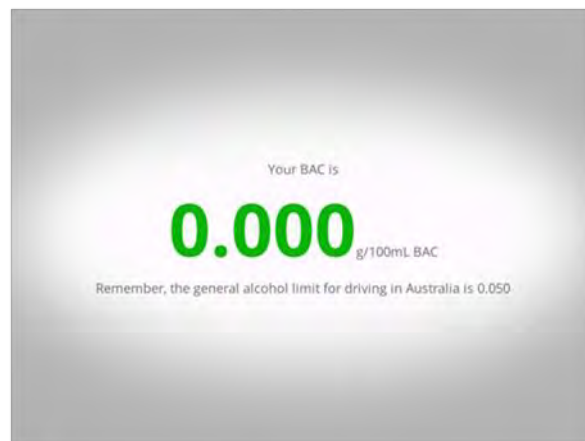


Figure 11 – BAC displayed

If the BAC detected is zero, the display will be green; from zero to 0.050g/100ml, the display will be orange and for readings above 0.050g/100ml, the display will be red.

The result will continue to be displayed while the instrument resets itself ready for the next test. For zero readings this will typically be about five seconds.

4.3. Invalid sample

The invalid blow screen is displayed if the user stops blowing before 1.2 litres is recorded, they blow too softly or blow too hard (refer Figure 12).

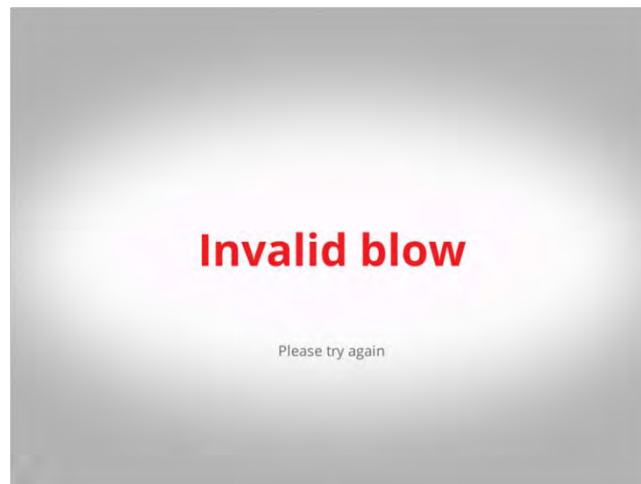


Figure 12 – Invalid blow

If the blow is invalid, cease blowing, wait until the Insert Straw and Blow screen is displayed and then provide another sample.

5. OWNER SERVICING

5.1. Straw replenishment

Should the straw bin require replenishing, perform the following procedures:

- a. Turn the WM4 off at the power point.
- b. Open the instrument by unlocking it and swinging it open.
- c. Open the straw bin by lifting the latch and removing the cover by manoeuvring it forward (refer Figure 13).



Figure 13 – Opening straw bin

- d. Load in new straws ensuring they lie loosely and tidily in the bin (refer Figure 14).



Figure 14 – Loading in straws

- e. Reinstall the bin lid by aligning it in the rear slots and latching it down. Ensure it is closed securely.
- f. Close and lock the instrument.
- g. Turn the power back on. The instrument will conduct internal checks and then be ready for use in a few minutes.

5.2. Cleaning

The outside of the machine can be cleaned by wiping it over with a soft moist cloth followed by a soft dry cloth. Do not use harsh cleaning agents, abrasive cleaning pads or chemicals.

6. USER CONTROLS

6.1. Buttons

WARNING

When the unit is open or not installed on the back plate, electrical components are exposed. The following steps require the user to open the WM4 with power applied. During the procedures ensure only the buttons mentioned are activated. Do not come in contact with any exposed components.

Inside the WM4 are buttons which can be used to access certain menus during setup and fault finding. Users should not access the machine and press these buttons unless specifically requested to by instructions in this manual or verbally when in contact with your Alcolizer Technology technical representative.

Access the buttons by unlocking the WM4 and swinging it open. The buttons are located on the main circuit panel (refer Figure 3). Refer to Figure 15 for location of the buttons.

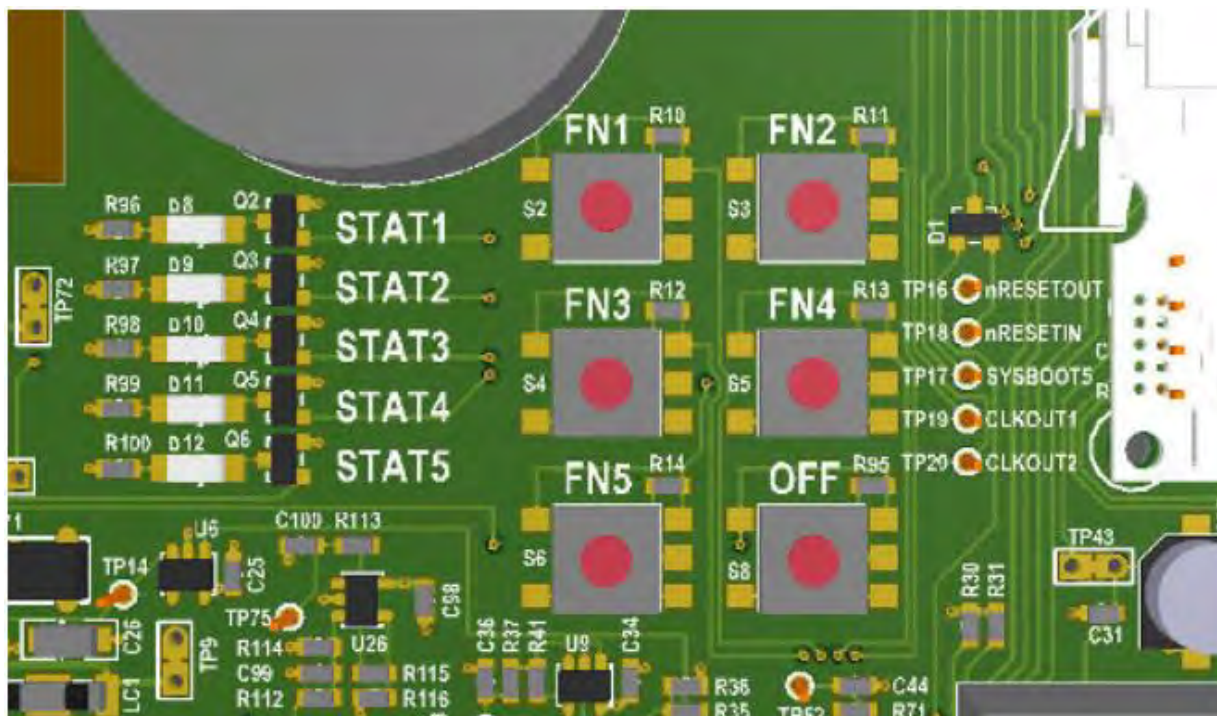


Figure 15 – Location of function buttons

The only buttons that users need to operate are FN1, FN4 and OFF. Do not touch the other buttons.

The buttons have the following functions:

- **FN1:** Show/hide the Status page. Does the same as pressing F1 on the keyboard.
- **FN4:** Save the event log to USB flash memory. Does the same as pressing F4 on the keyboard.
- **OFF:** Power-off and power-on the instrument.
 - If the instrument is running, press once to power down.
 - If the instrument is powered off, press once to start up.

WARNING

Pressing and holding the **OFF** button **may cause irreparable damage** to the instrument and should only be performed by an Alcolizer Technician.

6.2. Keyboard

WARNING

When the unit is open or not installed on the back plate, electrical components are exposed. The following steps require the user to open the WM4 with power applied. During the procedures ensure only the ports mentioned are touched. Do not come in contact with any other exposed components.

A standard 101 style keyboard (with a standard USB connection) or a wireless keyboard can be connected to the WM4 to access certain menus during setup and fault finding. Users should not

access the machine and attach a keyboard unless specifically requested to by instructions in this manual or verbally when in contact with your Alcolizer Technology technical representative.

Access the USB ports by unlocking the WM4 and swinging it open. There are four ports located on the main circuit panel (refer Figure 3). Refer to Figure 16 for location of the ports.

CAUTION

Use care when inserting the connector to the port to ensure neither are damaged.

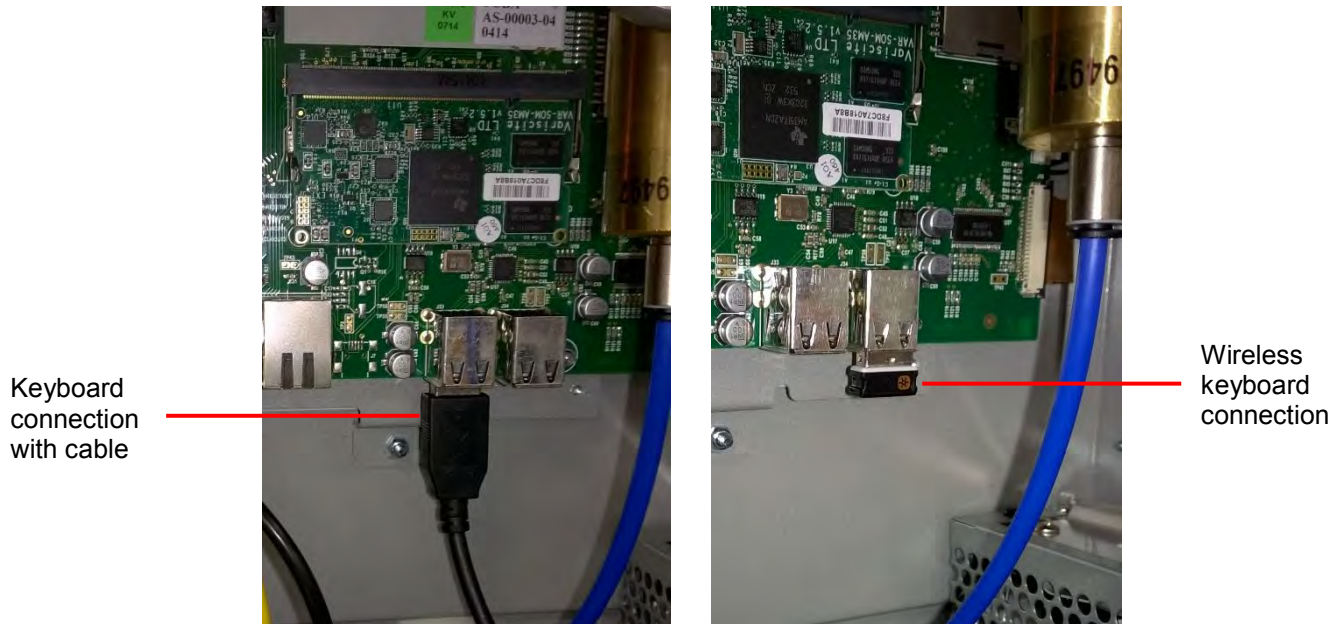


Figure 16 – Keyboard USB ports (cable and wireless)

Once the keyboard is connected, access to the various menus is available. The keyboard functions are as follows:

- F1: Toggle Status screen
- F4: Save event log
- Alt: toggle instrument configuration menu
- Esc: Toggle instrument configuration menu
- Alt+up: Switch to previous configuration page
- Alt+down: Switch to next configuration page
- Alt+left: Switch to previous tab or page
- Alt+right: Switch to next tab or page
- Ctrl+Alt+P: Write screen shot to USB

NOTE

Use only the left Alt key. The right Alt key has no function.

The spacebar has the same functionality as the Enter key in normal usage. When entering data, use the spacebar not the Enter key.

7. USER INTERFACE

7.1. Accessing the user menu

To access the User Menu, perform the following steps (refer Figure 17):

- Connect a keyboard in accordance with paragraph 6.2.
- Press the F1 key to access the WM4 User Menu area.
- Press the left Alt key to bring up available menu choices.
- Press the down key and move down to the required menu (e.g. Settings).
- Press left Alt to hide the menu and give clear access to the selected page.

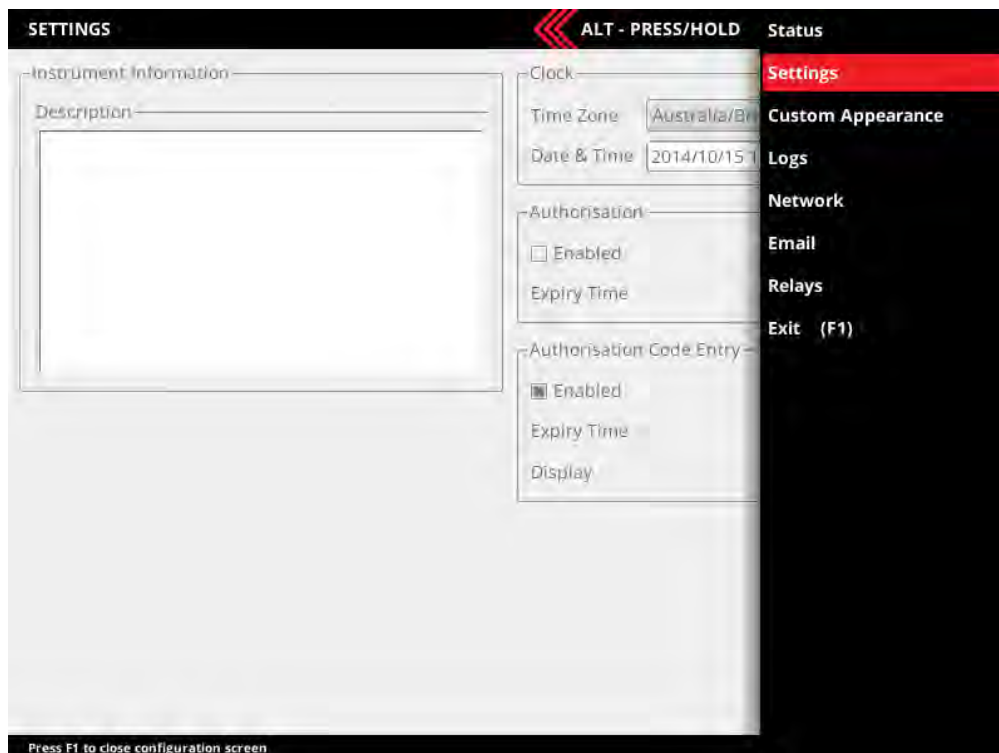


Figure 17 – WM4 User menus (Settings) page

NOTE

A mouse can be used to operate the various User Interface menus. Connect the mouse or mouse wireless connector in the same manner as the keyboard.

7.2. Status

The status page will provide a variety of information for the user (refer Figure 18):

7.2.1. Identification

- Serial Number: A number that uniquely identifies the WM4. This number is also printed on the side panel safety label located on the side of the instrument.
- Software Version: The version of software running in the WM4 (e.g. ac-9.1).

7.2.2. Status Items

The status items page will provide a variety of information for the user. Each status item is classified as one of the following.

- **Fault:** The instrument has encountered a critical error and is unable to perform breath analysis. The fault must be manually cleared (or repaired) by an authorised Alcolizer service technician on 1300 789 908.
- **Alert:** The instrument has encountered a temporary condition that is preventing the unit from performing breath analysis. For example, liquid detected in breath sample system. The alert will clear automatically. Breath analysis is disabled if an alert is active.
- **Warning:** The instrument has discovered a problem but is able to function normally (for the time being). For example, calibration gas low. Breath analysis is enabled if a warning is active.
- **Notice:** Information that might be useful to a technician but in no way represents a problem with the instrument. Breath analysis is enabled if a notice is active.
- **Disabled:** Breath testing is disabled for a reason other than a fault or alert. For example, no reference gas.

NOTE

Status items are displayed to the user on the Status page in the instrument's current language. Each status item also includes a unique code to help identify the status item when the instrument is in a different language.

7.2.3. Network Connections

The Network Connections area shows status information for the WM4 Ethernet port.

- A valid network connection is not required for the instrument to operate correctly, however if a WM4 has an internet connection the date and time will be automatically adjusted.
- If connected to a valid network the instrument's IPv4 address is displayed (e.g. 192.168.15.133).
- If not connected to a valid network, none available is displayed.

For further information regarding the Network refer to paragraph 11.

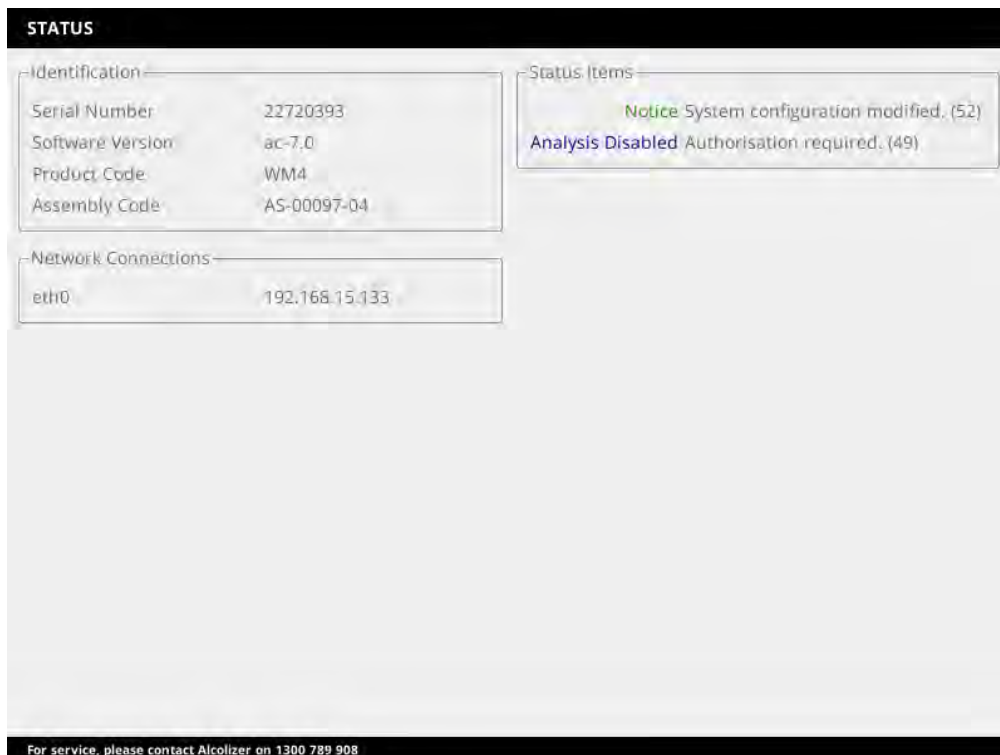


Figure 18 – Status page

7.3. Status LED lights

WARNING

When the unit is open or not installed on the back plate, electrical components are exposed. The following steps require the user to open the WM4 with power applied. Do not come in contact with any exposed components.

The WM4 status can also be assessed by viewing the status LEDs on the main circuit board while the unit is on. Only STAT4 and STAT5 LEDs display status. STAT4 displays the Log Export State and STAT5 displays the WM4 State.

The LEDs various displays indicate the following:

- STAT4:
 - LED Off - Log save not in progress
 - LED On - Log save triggered or in progress
- STAT5:
 - LED fast blinking – Reset
 - LED two short pulses – Starting up
 - LED continuous one short pulse – Running
 - LED steady blinking – Shutting down
 - LED on – Shut down (power still connected and On)
 - LED off – Unit Off

If any other blinking patterns are noticed, contact your authorised Alcolizer service technician on 1300 789 908.

8. SETTINGS

The settings page provides the configuration options available for the user (refer Figure 21):

8.1. Instrument Information

The instrument information feature allows a customer to add user-specific descriptions of the instrument (e.g. "Site 13, Gate B"). This description is included in all email reports by default.

8.2. Alcohol Display

The alcohol display feature specify how alcohol results are displayed by the instrument.

- **Numeric:** Show the specific alcohol content detected
- **Alcohol Detected:** Only indicate whether or not alcohol was detected in the sample.

8.3. Clock

The date and time can be set manually or automatically if the instrument is connected to the internet (via the wired Ethernet connection). There is no need to manually adjust it if connected to the internet.

In order for the WM4 to display the correct date and time, the time zone must be set correctly.

The display format is set to **YYYY-MM-DD HH:MM:SS** and cannot be changed.

NOTE

There is a 9V battery installed in the instrument to retain the date and time for several years while disconnected from mains power.

8.4. Authorisation

The authorisation feature when enabled prevents the WM4 from performing a breath test until it has received authorisation from an external agent (e.g. remote serial device, keypad, Coin Mechanism, etc).

- **Enabled:** Check to enable breath test authorisation. For further information about breath test authorisation refer to paragraph 15.
- **Expiry Time:** Once a single breath test is authorised, the test analysis must be completed within this time or the authorisation expires and a new authorisation is required.

8.5. Authorisation Code Entry

These settings are only accessible if breath test authorisation is enabled. They apply to authorisation code entry using a USB input device (keyboard, swipe card reader, etc).

- **Enabled:** Check to allow authorisation codes to be entered using a USB input device.
- **Expiry Time.** Amount of time a user has to accept the input code (by pressing ENTER) before the code entry expires and the user must start again.
- **Display.** Specify how password characters entered on the screen should be displayed (refer Figure 19).

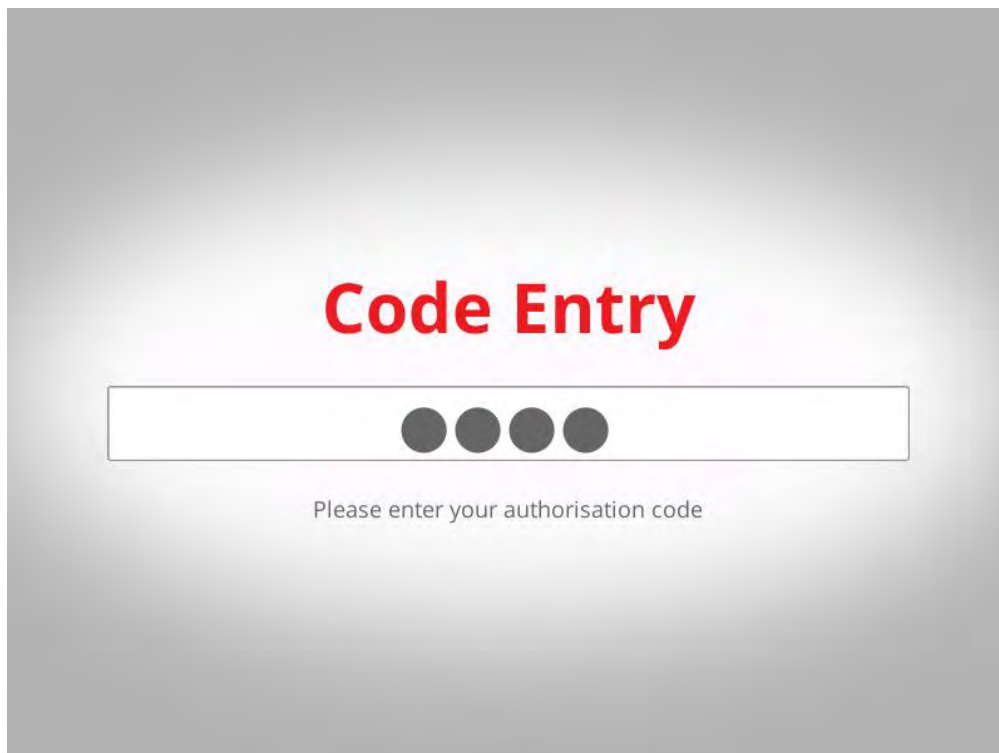


Figure 19 - Code Entry Screen

8.6. Shutdown Instrument

When the Shutdown Instrument button is pressed the following options are presented to the user (refer Figure 20):

- **Reboot:** Restart the instrument.
- **Power Off:** Shutdown the instrument so that mains power can be removed. This method or the OFF button on the PCBA localised internally in the WM4 are the only two ways to correctly power off the instrument.



Figure 20 - Shutdown

Figure 21 - Settings

9. CUSTOM APPEARANCE

9.1. General Information

The front screen can be customised to suit specific customer requirements. Various images and messages can be displayed. The supported image formats are PNG, BMP, and GIF, however PNG is recommended. The available space for the image is 800 pixels wide and 234 pixels high. To save time in uploading a background image, have only one image on the storage device.

9.2. Background graphics

To import a background graphic, proceed as follows:

- Connect a keyboard and access the User Menu in accordance with the procedures at paragraph 7.1.
- From the User Menu, access the custom appearance screen by scrolling down to Custom Appearance and pressing space bar. The Custom Appearance screen will appear.
- Tick the Show Idle Background Image box (refer Figure 22).
- Insert a USB storage device (thumb drive) with the desired image into an available USB port (refer Figure 16).
- Click on the Select Image button.
- Select the required graphic from the Select Image page and click OK.
- That image will now appear on the screen.

9.3. Custom Text

The Elements area allows customisation of user interface text for a variety of breath testing screens.

Display custom text on the screen as follows:

- Connect a keyboard/mouse and access the User Menu in accordance with the procedures at paragraph 7.1.
- From the User Menu, access the custom appearance screen by scrolling down to Custom Appearance and pressing space bar. The Custom Appearance screen will appear.
- Tick the Use Custom Text box in the elements field.
- Select the desired screen.
- Type the required text in the free text field for the highlighted screen.
- To activate a free text of a specific screen, tick the box beside the screen name.

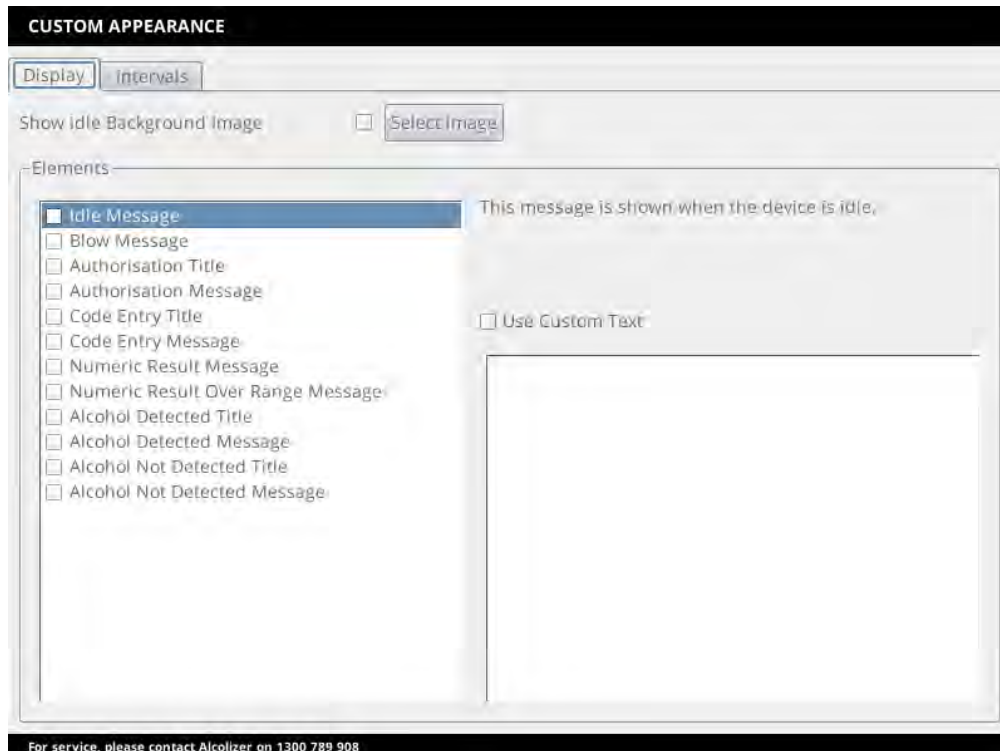


Figure 22 – Custom Appearance - Custom Text

9.4. Intervals

It is possible to adjust the timings for some screen display intervals. Descriptions of how the timings apply to the display are presented for each adjustable interval (refer Figure 23).

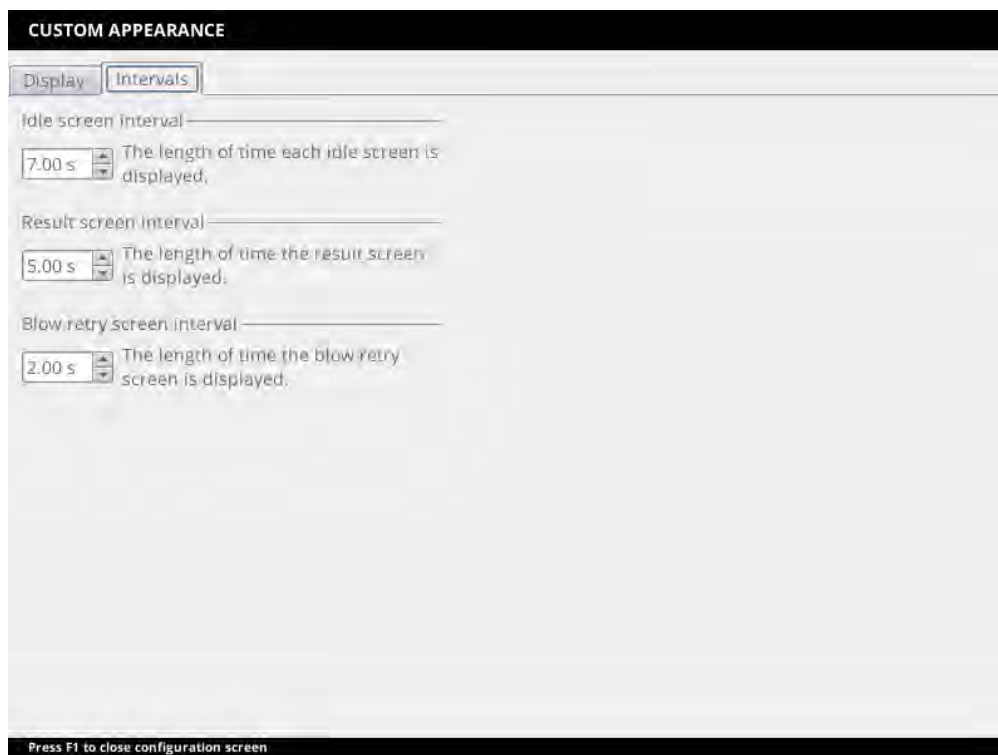


Figure 23 - Custom Appearance – Intervals

10. LOGS

10.1. View

The View contains the log records which consist of one or more pieces of information. Each record will show a unique log record id entry followed by the date and time and a brief description of the logged event.

Selecting an item in this panel a more detailed view of the selected log record is also presented below the list of log records (refer Figure 24).

NOTE

If the instrument has a camera installed and enabled then there will also be a photo panel showing any photos associated with the selected log record. If the panel does not have focus it will act as a slideshow over the available images. If the panel has focus the arrow keys can be used to navigate to a specific photo.

The log record can contain any of the following events:

- **Calibration Failed.** Instrument calibration was not successful.
- **Calibration Gas Bottle Changed.** The calibration gas bottle was changed and service life was reset.
- **Calibration Successful.** Instrument calibration was successful.
- **Result.** The result of a breath test.
- **System Shutdown.** The instrument was shut down (to be powered off or rebooted).

- **System Started.** The instrument was started.
- **System Time Changed.** The wallmount's time or date was changed.
- **Fault Cleared.** A fault status item cleared.
- **Fault Set.** A fault status item set.
- **Alert Cleared.** An alert status item cleared.
- **Alert Set.** An alert status item set.
- **Warning Cleared.** A warning status item cleared.
- **Warning Set.** A warning status item set.
- **Notice Cleared.** A notice status item cleared.
- **Notice Set.** A notice status item set.
- **Breath Analysis Block Set.** Data analysis is disabled.
- **Breath Analysis Block Cleared.** Data analysis enabled.
- **Fuel Cell Changed.** Fuel cell changed, configuration and data was reset.

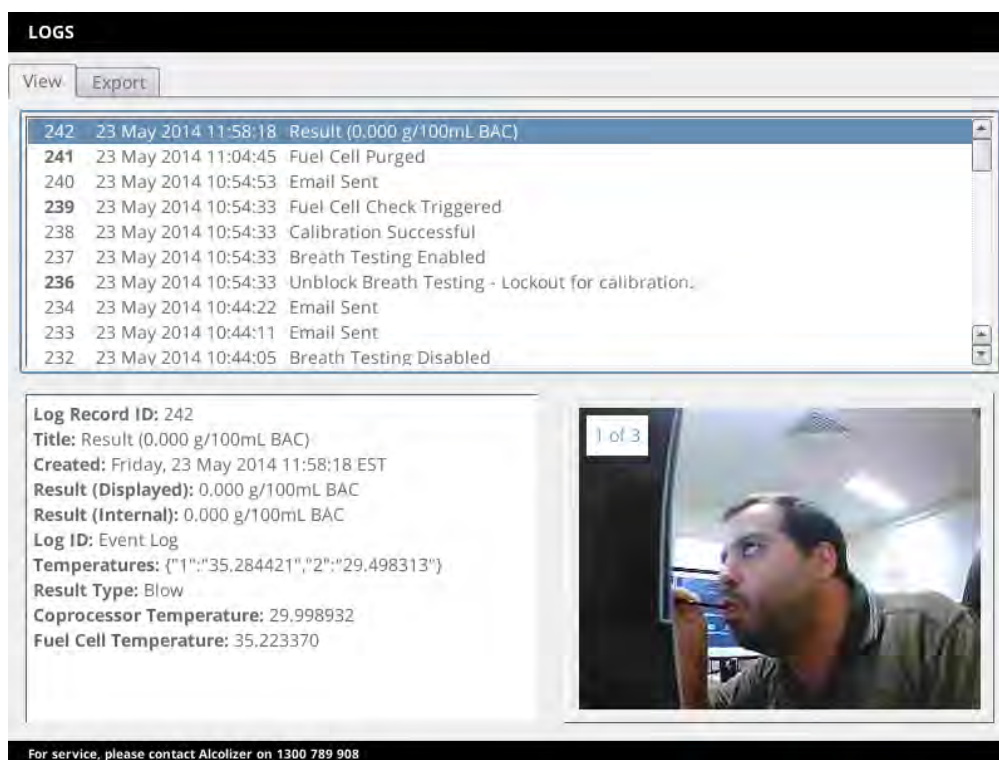


Figure 24 - Logs - View

10.2. Export

Logs can be exported from the instrument into USB flash drive both by using the Save button on the *Export* page or automatically when a USB flash drive is inserted if configured to do so (refer Figure 25).

Alternatively, the records can be exported by inserting a USB flash drive and pressing FN4 on the PCBA. Refer to paragraph 6.1 to see button location.

These are the formats which logs can be exported:

- **CSV:** Comma Separated Values with one log record per row and record fields separated by commas within rows. This is suitable for import into most spreadsheet applications.
- **JSON:** JavaScript Object Notation in a format suitable for integration with automated systems.

It is also possible to erase the current event log records on the device using the *Erase Event Log* button.

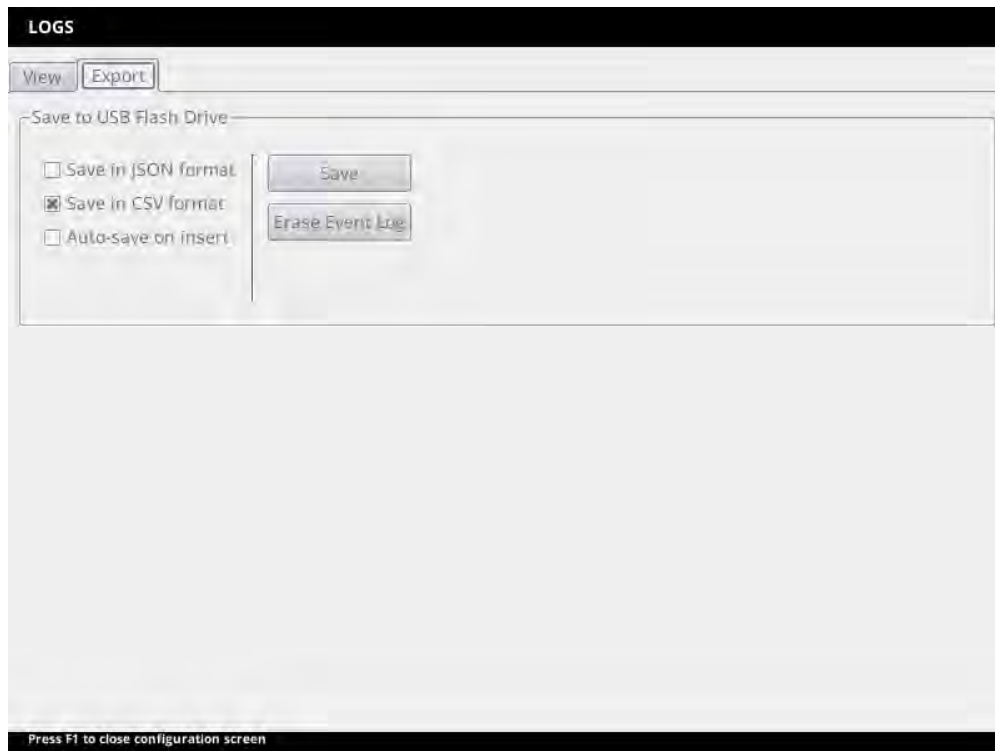


Figure 25 - Logs – Export

11. NETWORKS

11.1. Configuration

The configuration panel provide general information about the network connection and device.

11.1.1. Network Setup

The network IPv4 Configuration can be set to obtain an IP address automatically or use a static IP address.

Establish an internet connection as follows:

- Connect the WM4 to an internet receptacle via the Ethernet cable.
- Connect a keyboard/mouse and access the User Menu in accordance with the procedures at paragraph 7.1.
- From the User Menu, access the network configuration screen by scrolling down to Network and pressing space bar. The Network Configuration page will appear (refer Figure 26).

- d. Complete the Configuration page with the required details to establish the network connection if a Static IP address will be used or select “Obtain an IP address automatically”.

Figure 26 – Network Configuration

11.1.2. GSM Set up

The WM4 keypad + camera + cellular model includes a GSM (**Global System for Mobile Communications**) modem with a SIM card that must be activated as part of the set up procedure. The SIM card activation code is located inside the WM4 device.

This model does not require changes to the network configuration since it comes set from the factory.

11.2. Services

11.2.1. Authorisation Over Network

The americium protocol (refer paragraph 15.1.1) can be enabled on a TCP/IP port to allow breath test authorisation over the network. The operation of this feature is identical to the protocol operating over the serial ports. There is no limit to the number of network clients that can connect simultaneously. Refer to Figure 27.

- **Enabled:** Whether the instrument accepts network connections on the specified port. This is disabled by default.
- **Port:** The TCP port number.

11.2.2. Alcolizer Portal

The Alcolizer Portal enables your device to post logs and status information from the instrument to the portal which is a Cloud service. This portal provides a real-time solution with analytical and statistical tools.

NOTE

Please, contact your Alcolizer Technology representative for further information about Alcolizer Portal.

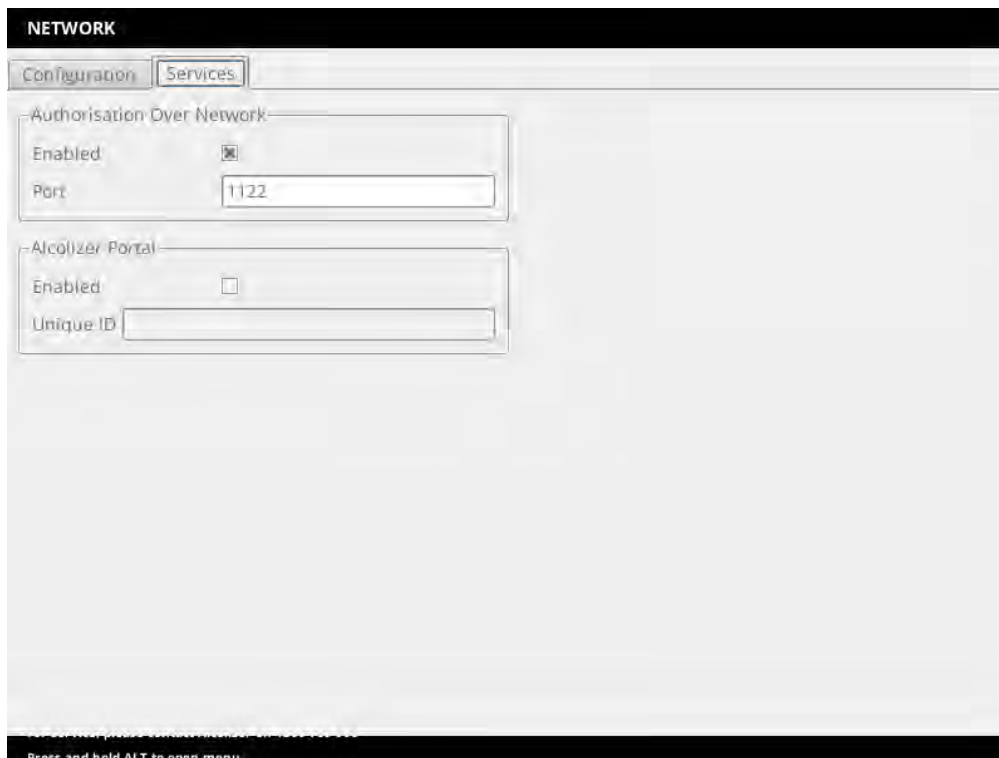


Figure 27 - Network Service

12. EMAIL

12.1. Email Settings

The WM4 is equipped for forwarding email notifications of status and logs. To configure the email function, perform the following steps:

- Establish an internet connection via the Ethernet cable. This step is not required if the instrument has a GSM modem.
- Connect a keyboard/mouse and access the User Menu in accordance with the procedures at paragraph 7.1.
- From the User Menu, access the email configuration screen by scrolling down to Email and pressing space bar.
- The email screen has two tabs: Settings and Reports.

12.1.1. Settings – Mail template

The Mail Template panel allows configuration of the format and recipients of emails sent from the instrument. It features the following settings fields (refer Figure 28):

- Default Recipients:** A list of email recipients for emails produced by the instrument. e.g. someone@bigmine.com.au. Add additional recipients as required separating each with a space.

- **Subject Prefix:** Text to be prepended to the subject line of emails produced by the instrument. It is also possible to use text replacement allowing real data to be inserted into the text when the email is sent.
- **Email Footer:** Text to be appended to the body of emails produced by the instrument. It is also possible to use text replacement allowing real data to be inserted into the text when the email is sent.

Figure 28 – Email Settings

12.1.2. Settings – Mail server

The Mail Server panel allows configuration of the email account used by the instrument to send emails. This must be a valid email account as it would be configured in a desktop email program. It features the following settings fields (refer Figure 29).

- **Username:** The username (typically an email address) used to log into the SMTP server.
- **Password:** Password associated with the specified username. Pressing the password button clears the current password and shows a text editor to enter a replacement password. The password characters are obscured by default; press the “eye” icon to temporarily display the password characters.
- **Hostname:** URL of the SMTP server (e.g. smtp.gmail.com).
- **Port:** The TCP/IP port number used by the SMTP server. Leave blank to use a default value.
- **Use SSL:** If enabled then use secure sockets layer to connect to the SMTP server.



The image shows a 'Mail Server' configuration window. It contains the following fields and controls:

- Username:** A text input field.
- Password:** A text input field with a 'Set Password' button to its right.
- Hostname:** A text input field.
- Port:** A text input field.
- Use SSL:** A checkbox that is currently checked.

Figure 29 – Mail Server

12.1.3. Test Mail

The Test Mail panel allows sending a test email from the system confirm email settings and provide feedback on any issues the instrument has sending emails.

Activating **Send** will initiate a test email with the current configuration. The Test Mail panel will then report the status of sending the email and if it fails indicate information about how sending the test email failed. Due to the very long time out periods specified for email configuration if there is an issue with the Mail Server settings it can take a very long time for the test email to fail and this can also block further tests emails being sent until the time out for the previous email has sent.

12.2. Email Reports

12.2.4. Breath Test Results

The instrument can be configured to send an email detailing the result of a breath test. This can be done for both zero and positive results. If instrument authentication is enabled, the report can also include information about previous breath tests from the same authentication code (refer Figure 30).

12.2.5. Instrument Status

Notification about changes in instrument status can be sent from the instrument for various types of status information. The report includes information on all currently active status items, not just the status item that changed state (refer Figure 30). The status options are:

- **Faults (Permanently Out of Order)** – send an email if a fault is raised or cleared.
- **Alerts (Temporarily Out of Order)** – send an email if an alert is raised or cleared.
- **Warning** – send an email if an alert is asserted or cleared.
- **Notice** – send an email if a notice is asserted or cleared.

12.2.6. Event Log Report

The instrument can be configured to send periodic emails containing log information for the given period. The interval for the report can be configured from hourly through to monthly and the day or hour the report will occur on is dependent on the start date (refer Figure 30). For example:

- The current date is the 3rd of October 2013.
- The Start Time chosen is on the 29th of September 2013, 12 noon.
- The Report Interval is Weekly.

- The next email will be sent on the 6th of October 2013, 12 noon.

EMAIL ALT - PRESS/HOLD

Settings Reports

Breath Test Results
Send an email with the result of each breath test.
☐ Zero results
☒ Positive results

Instrument Status
Send an email when the instrument status changes.
☒ Faults (Permanently Out of Order)
☒ Alerts (Temporarily Out of Order)
☒ Warnings
☐ Notices

Event Log Report
Periodically email an event log report.
☒ Enabled
Start Time: 2013/9/29 12:00:00
Report Interval: Weekly

Press and hold ALT to open menu

Figure 30 – Email Reports

13. RELAYS

The WM 4 is equipped with three relay outputs on the circuit board and their outputs can be configured to trigger in response to a breath test result. To access the Relays Menu refer to paragraph 7.1.

If a relay output is enabled the relay is triggered for the specified duration if the breath test result is *greater than or equal to* the minimum value and *less than* the maximum value.

The relay outputs are independent of each other. The minimum and maximum values can overlap such that one, two, or three relays can be triggered simultaneously.

If a new breath test result is calculated while a relay output is asserted from the previous test, the relay takes the value required by the new test.

13.1. Hardware

The relays outputs are labelled on the circuit board as Relay1, Relay2 and Relay3 (refer Figure 31).

Each relay output has three terminals:

- **COM:** Common connection.
- **NC:** Normally Closed, the COM/NC circuit is closed (passes current) when the relay is not triggered and open when the relay is triggered.
- **NO:** Normally Open, the COM/NO circuit is open when the relay is not triggered and closed (passes current) when the relay is triggered.

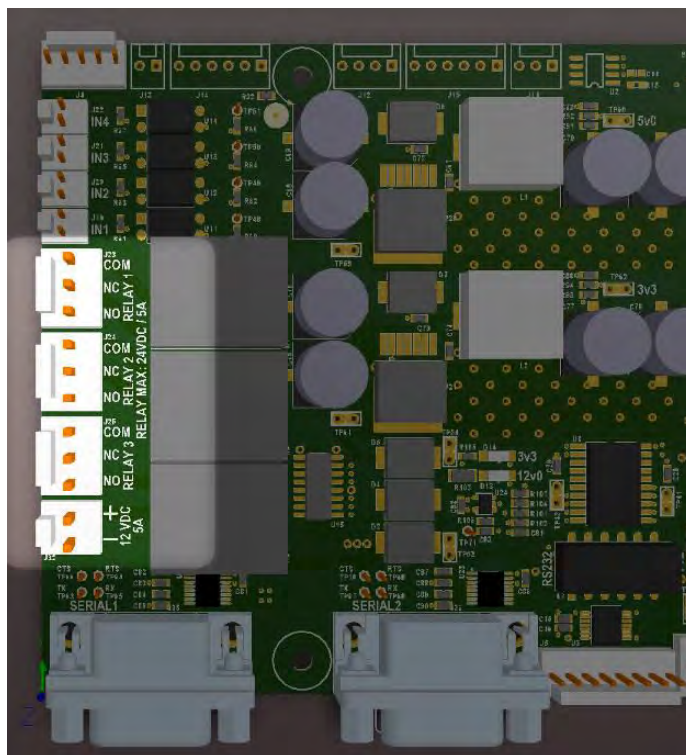


Figure 31 - Relays - Installation

13.2. Configuration

There are three relays available and their behaviour can be configured on the *Relays* page (refer Figure 32). For each relay the following properties can be configured:

- **Enabled:** If checked indicates that the relay should respond to breath test results and enables remaining configuration items for the relay.
- **Min:** If a result is greater than this value the relay should turn on for the configured duration. If the minimum value is 0.00 the result should turn on if the value of the result is greater than or equal 0.00.
- **Max:** If a result is less than this value the relay should turn on for the configured duration. If the maximum value is 0.00 the result should turn on if the value of the result is less than or equal 0.00.
- **Duration:** If the relay is enabled and a breath test result falls within its configured range, the relay should fire for a number of seconds equal to the configured duration.

The *Relay Status* indicates if the relay is currently **ON** or **OFF**.

There are three buttons on this page that briefly activates the relays.

NOTE

It is possible for breath test results near a configured value for the relays to act differently depending on whether the actual value was slightly above or below the displayed value. This is due to the nature of the analog input from the fuel cell and possible rounding behaviour below the precision of the displayed value. In this situation the instrument will not activate two relays in the situation where one relay shares a nonzero maximum with the minimum value from another relay.

	Enabled	Min	Max	Duration	Relay Status	Test
RELAY 1	☐	0.000	0.001	1.00	Off	RELAY 1
RELAY 2	☐	0.001	0.020	1.00	Off	RELAY 2
RELAY 3	☐	0.020	10.000	1.00	Off	RELAY 3

Press F1 to close configuration screen

Figure 32 – Relays

14. SELF-CHECK

This page allows running some automated self-checks of the instrument to validate the instrument configuration and behaviour (refer Figure 33).

Each test indicates whether it has been recently tested and lists a title as well as provides a description of what the test does. One, many, or all tests can be run. Some tests require a degree of user interaction and if this occurs instructions will appear on the screen indicating how to proceed.

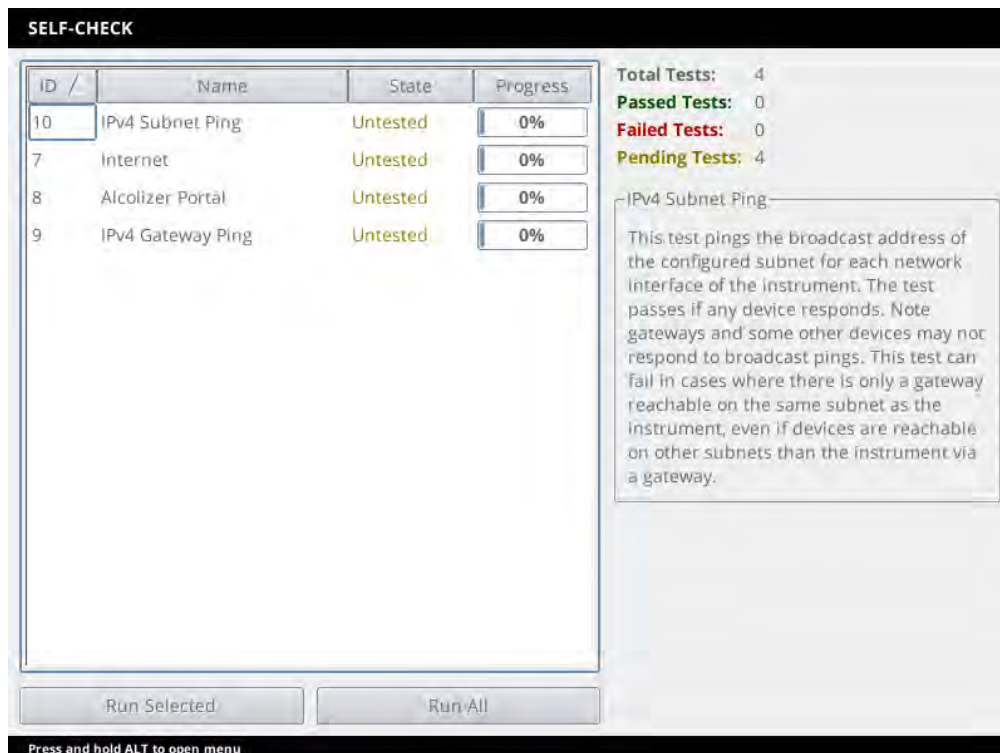


Figure 33 - Self-Check

15. BREATH TEST AUTHORISATION

Breath test authorisation is a feature that prevents the wallmount from performing a breath test until it has received authorisation from an external agent (remote serial device, keypad, etc). The authorising agent sends a code to the wallmount that allows the wallmount to execute a single breath test. Once the test is performed the authorisation code and authorisation source is logged with the breath test result in the event log and the wallmount waits for authorisation to perform further tests. If a breath test is not performed within a timeout period the authorisation expires and the wallmount must receive a new authorisation code to perform further tests.

Authorising agents connect to the wallmount through authorisation channels. An authorisation channel is a combination of a physical connection (serial port, ethernet port, etc) and a software protocol operating over that physical connection.

The following authorisation channels are supported depending on model being used:

- Two RS-232 serial ports (Serial 1 and Serial 2) running the americium serial protocol.
- An attached Wiegand USB device running the Wiegand serial protocol.
- Any number of direct network connections running the americium serial protocol.
- HID input device attached to a USB port (keyboard, card reader, etc).
- The coin mechanism hardware.

15.1. Serial Port Authorisation

The two RS-232 serial ports are activated with the americium serial protocol (v2) at all times, whether test authorisation is enabled or not. This means that all breath test results are sent by the wallmount on *both* serial ports.

If authorisation is enabled then an agent can send authorisation codes to the wallmount on *either* serial port.

The instrument also supports Wiegand based test authorization, if enabled in production.

15.1.1. Americium Serial Protocol

The americium serial protocol operates on *both* serial ports with the following settings:

- Protocol version: am-spec-02
- **Date/Time:** local time (not UTC)

Please contact your Alcolizer Technology representative for further advice.

15.2. Wiegand USB device

The Wiegand support operates via USB serial connections and allows a test to be authorized via a Wiegand card reader.

15.2.1. Direct Network Connection

If enabled on the Service page on Networks menu, the americium protocol can operate over a direct network connection on a configurable port number.

When a remote device connects to the wallmount it will receive *all* breath test results according to the americium protocol specification.

If breath test authorisation is enabled the remote device can also authorise breath tests.

There is no limit to the number of devices that can connect simultaneously to the wallmount.

15.2.2. USB Input Device Authorisation

Any HID input device connected to a USB port (e.g. keyboard, card reader, etc) can be used to enter authorisation codes.

Legal characters are **a-z**, **A-Z**, and **0-9**, all other characters are ignored.

A carriage return <Enter> is required to submit the data.

The <Esc> key is used to cancel data entry.

15.3. Coin Mechanism Authorisation

The coin mechanism is a hardware peripheral that attaches to the **IN1** trigger input.

When this hardware input is closed (e.g. by a coin received in the coin mechanism) a single breath test is authorised.

16. FACTORY SERVICING AND TROUBLESHOOTING

16.1. Factory Servicing

The instrument requires servicing after 365 days of usage by an authorized Alcolizer Technology service technician. This can be performed on site or the unit can be returned to Alcolizer's facility.

NOTE

The next service date is defined by the number of days that a WM4 was left ON and performed auto-calibrations (365 in total). The system will display a warning message based on the number of auto-calibrations. If a device was stored by a customer for six months before it was turned on, the service will happen 18 months after it was dispatched.

Contact Alcolizer Technology by any of the following means:

- Phone: 1300 789 908;
- Email: service@alcolizer.com; or
- Web: www.alcolizer.com.

If the machine is to be returned to Alcolizer, prepare it for shipment in accordance with the following procedures:

- a. Turn off the instrument and unplug the power cord.
- b. Unlock and open the instrument.
- c. Turn the gas off by turning the valve on the gas cylinder.
- d. Remove straws and tape down straw bin lid.
- e. Using two-man lifting techniques, lift the instrument off the back plate hinges to and remove it from the wall.
- f. Pack the instrument into suitable packaging to ensure it is not damaged in freight.

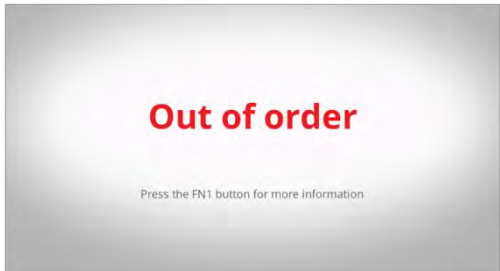
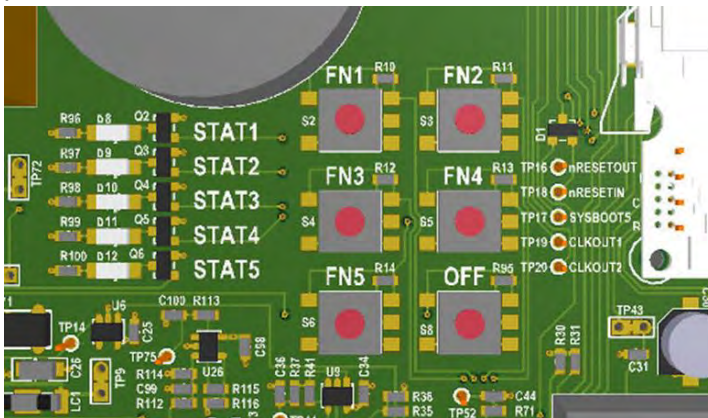
16.2. Field Servicing

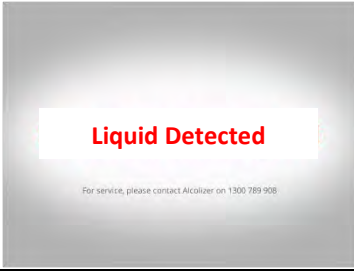
Contact Alcolizer Technology for further information.

16.3. Troubleshooting

Should the machine malfunction or a warning message appear on the screen, consult Table 2 – Troubleshooting chart in the first instance.

Table 2 – Troubleshooting chart

Noted Problem	Suggested Action
The instrument is displaying an Out of Order message on the screen after initial start-up. 	Ensure the gas bottle valve is open - turn one full turn anti-clockwise. Then, press FN2 button on the circuit board to force calibration.
The instrument continues to display an Out of Order message on the screen after initial start-up.	Wait for the instrument to perform an automatic calibration. Note: this could be performed instantly but may take up to 24 hours.
The instrument continues to display an Out of Order message.	Contact Alcolizer Technology for further advice: 1300 789 908.
The instrument is displaying a warning icon in the bottom left corner. 	Either there are status items requiring attention (press “FN1” to identify items requiring attention), or the service life may shortly be about to expire. Contact Alcolizer immediately to arrange annual service: 1300 789 908.
Locating FN buttons.	FN buttons are located on the circuit board as shown in the picture below. 

The instrument is displaying “Service Life has Expired”. 	The instrument’s service life has expired and requires its annual service. Contact Alcolizer immediately to arrange service: 1300 789 908.
My instrument is displaying “Liquid Detected”. 	It is possible that liquid has been blown into the sample port. Ensure liquid is not present and try again. If the problem persists, allow a suitable time period for the liquid to clear itself (anywhere up to 48hrs). You may also attempt to clean the inlet sample port with a dry pipe cleaner. If the problem persists, contact Alcolizer to arrange for servicing: 1300 789 908.

17. CALIBRATION

The WM4 self-calibrates every 24 hours and requires no user calibration.